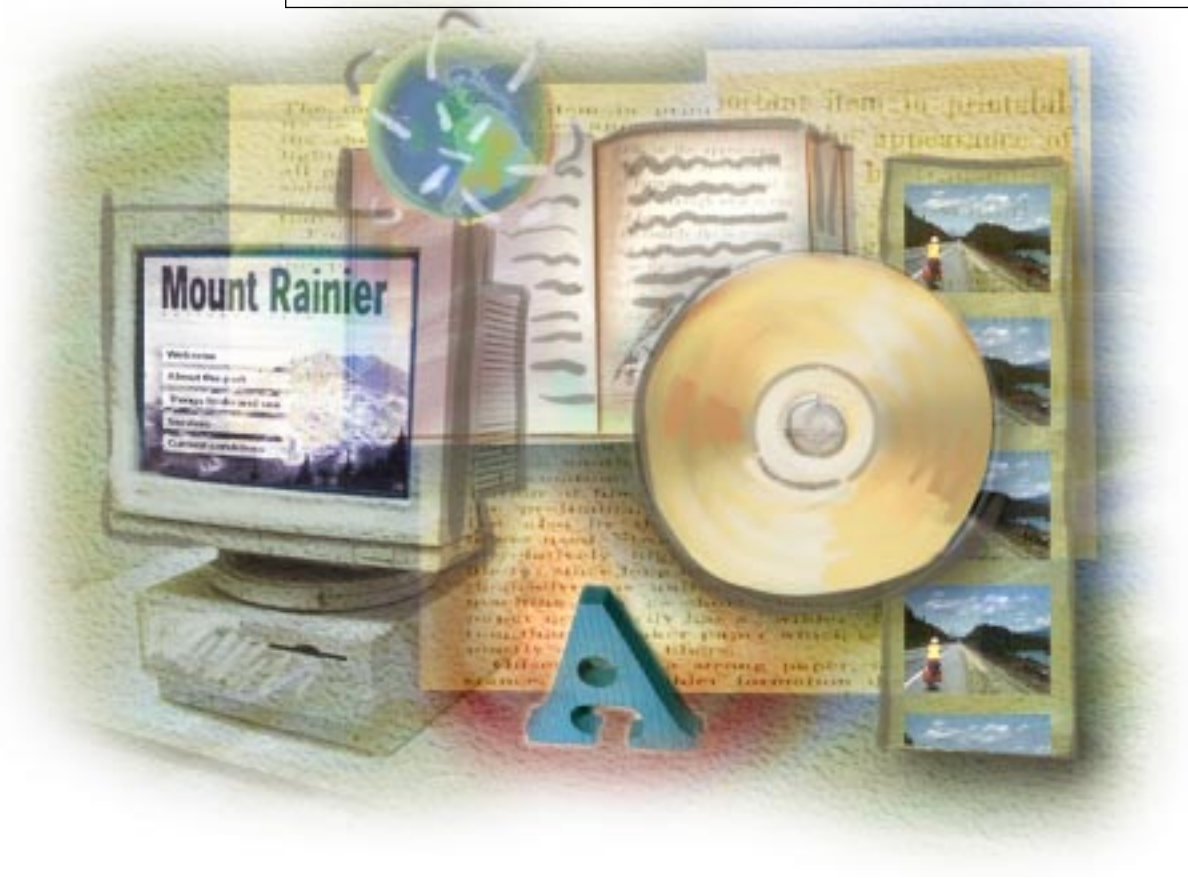
Electronic Publishing Guide

The guide to Acrobat® publishing on the World Wide Web or CD-ROM



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1 Introduction to Electronic Publishing

Overview

The desktop publishing revolution put quality publishing tools within reach of more people than ever before. Now, easy access to the Internet and to CD-ROM recorders enable wider distribution of electronic publications—easily transportable documents that include links, sound, and video.

In addition, the power of electronic publishing is now available to documents that were not even created on a computer. A scanner and electronic publishing tools can bring paper documents into publishing's future as compact and searchable electronic publications, instantly accessible.

The new tools, capabilities, and requirements of electronic publishing pose fresh challenges to the processes of design and

production. To be successful, electronic publishers must carefully evaluate traditional principles of good writing, design, and production in the context of new media.

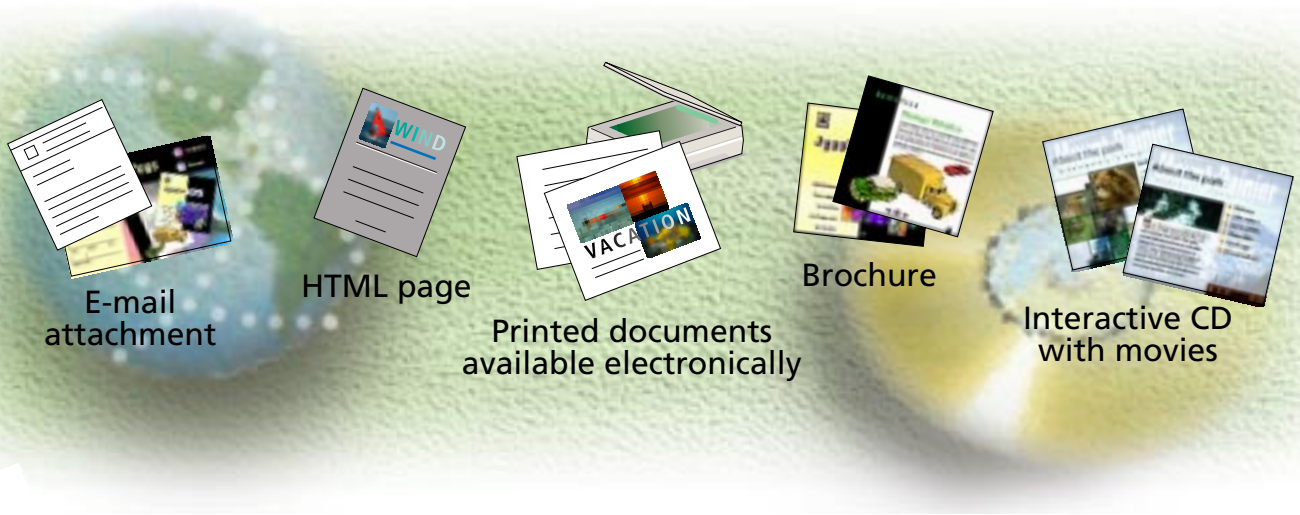
Adobe Systems provides professional tools for two popular electronic publishing formats—the Hypertext Markup Language (HTML) and the Portable Document Format (PDF). This guide focuses on creating PDF publications for Adobe Acrobat; however, most of the principles covered in this guide apply to electronic publishing in general. Click the Adobe logo button below for more information on Adobe and its products.

What is Electronic Publishing?

Electronic publishing can appear in many forms, from an interactive CD-ROM title to an electronic document library on the World Wide Web.

Electronic publishing provides the following advantages over traditional paper publishing:

- Quick access to reference materials
- Interactive multimedia capabilities
- Document distribution through the Web, CD-ROM, or as an e-mail attachment
- Electronic indexing and searching of existing paper documents



Why Publish Electronically?

Publishing a document electronically allows fast, economical distribution, the ability to search and index text, and easy updating. The faster you want to retrieve documents, or the more documents you have, the greater the benefits.

With electronic publishing, many traditional publishing steps disappear, such as press checks, printing, binding, and transportation. New production issues arise, such as computer and network speed, disk storage space, and variations in computer hardware and software. However, even with the newest technologies, publishers are finding that the key to successful electronic publishing is the same as with paper publishing: understanding the requirements of the project, the audience, and the distribution medium.

The Internet and the World Wide Web

The Internet is a popular medium for distributing information electronically. An ever-expanding network of networks, the Internet has no single owner. Its cables and equipment are owned and maintained by a mix of private and public network providers.

The Internet carries several kinds of communication services including e-mail, file transfer protocol (ftp), and Usenet newsgroups. The fastest-growing part of the Internet is the World Wide Web. The Web is easier to use than other Internet services. You can navigate the Web simply by pointing and clicking, using a viewing program called a *Web browser*. Also, you can create basic content for the Web without much programming experience.

The ease of publishing and reading on the Web has given rise to *intranets*, private networks based on Internet technology. An intranet can connect offices within a building or around the world without being accessible to the general public.

The Internet is a network that carries services such as e-mail and the World Wide Web.

Reading and Publishing on the Web

Reading and publishing Web pages require Web access, available in several ways:

• You may be a member of an organization that has an Internet connection, such as a business, school, or public library. Some organizations allow members to publish personal Web pages using the organization's server.

• You can use a modem to connect through an Internet Service Provider (ISP). Many packaged Web browsers include connection offers from ISPs.

• You can connect your computer directly to the Internet using Web server software, available for many platforms including Macintosh®, Windows®, and UNIX®. A direct connection requires the most responsibility and maintenance, and works best with a dedicated computer and telephone line.

Once a document is published on a Web server, anyone with Web access can retrieve it.

On-Screen Viewing and Printing on Demand

A key project requirement is anticipating whether a publication will be both distributed and viewed online, or distributed online for printing on demand. For example, if your publication is a lengthy, text-intensive document that people will read from start to finish, you'll probably design it for printing on a desktop printer. If your publication is a brief overview designed around colorful on-screen graphics, you'll probably be less concerned about how it will print and design it so that it displays well on a monitor. If you are simply transferring existing paper documents for occasional electronic access, you may not need to redesign them at all.

If you know that your audience will want to both read a publication online and print it, layout strategies and PDF features such as article threads can make the publication useful both ways.

Click thumbnails to view samples.

Delivery Media and Display Performance

Speed is a significant factor in electronic publication design. A publication usually slows down because its pages are too large for the distribution medium that transfers it to the computer, or because of the speed of the receiving computer. When you include many color images and movies on a page, it can become too large for today's networks and CD-ROMs to display quickly. For any medium you choose, determine the typical speed of the equipment available to your audience; then test and adjust your publication so that it performs well at that speed.

On the World Wide Web, a common guideline is to design pages that transfer quickly over a 14.4Kbps modem. The size of individual pages is more important than the size of an entire publication, because a properly configured Web server sends a PDF publication one page at a time.

For CD-ROM distribution, a common guideline is to design publications that perform well on a double-speed (2x) CD-ROM drive. Most PDF publications display quickly at this speed, except some with movies and large color images. The speed of the receiving computer is less significant because most computers can usually display a page faster than a network or CD-ROM can transfer it.

Internet Data Rates

In addition to the familiar telephone line, telecommunications providers offer various speeds and combinations of *lines*, or connections, and *services* which run over the lines.

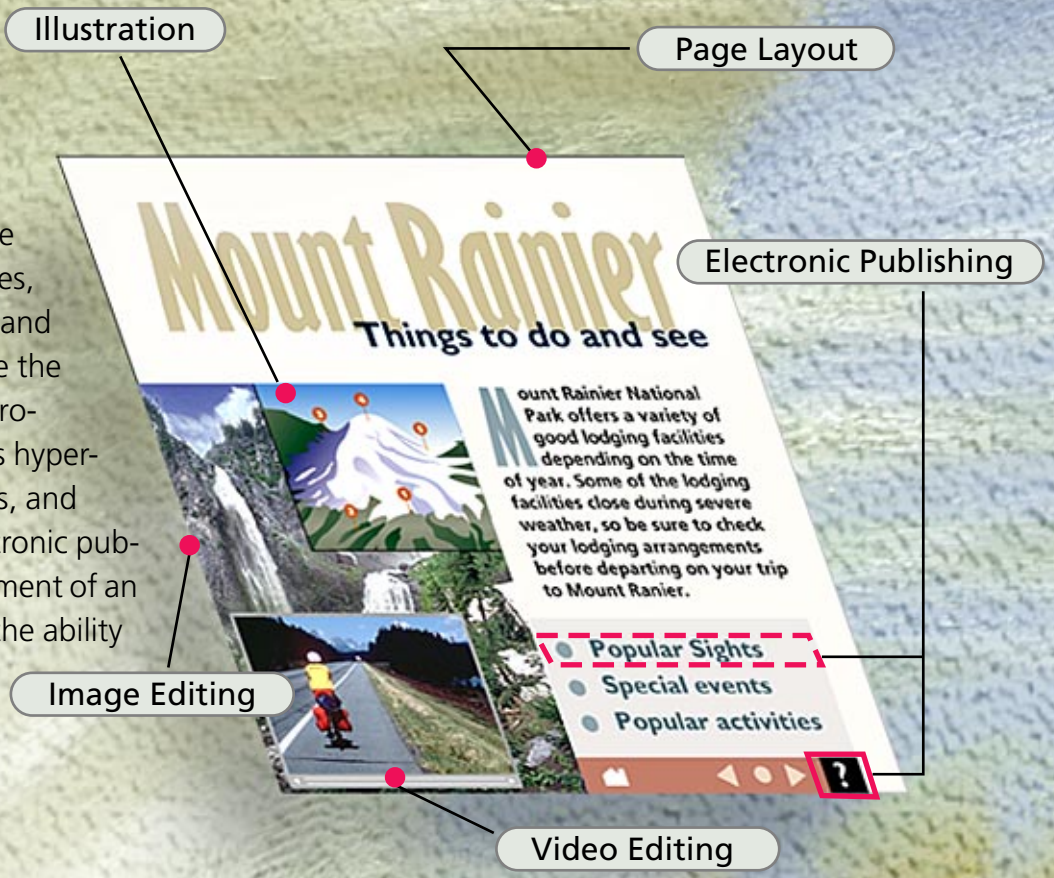
	Data rate (Kb / KB per sec)	60 KB page	300 KB page	10 MB movie
Telephone line	14.4 / 1.8	34 seconds	3 minutes	1.6 hours
Telephone line	28.8 / 3.5	17 seconds	1.4 minutes	48 minutes
ISDN service	64 / 7.8	8 seconds	39 seconds	22 minutes
ISDN service	128 / 15.6	4 seconds	19 seconds	11 minutes
T1 line	1540 / 188	<1 second	1.6 seconds	54 seconds
T3 line	45000 / 5500	<1 second	<1 second	1.8 seconds

These numbers represent ideal conditions—use only for comparison. Actual rates vary widely due to many factors. See your telecom provider for availability of lines and services.

Kb: kilobits
KB: kilobytes

Electronic Publishing Tools

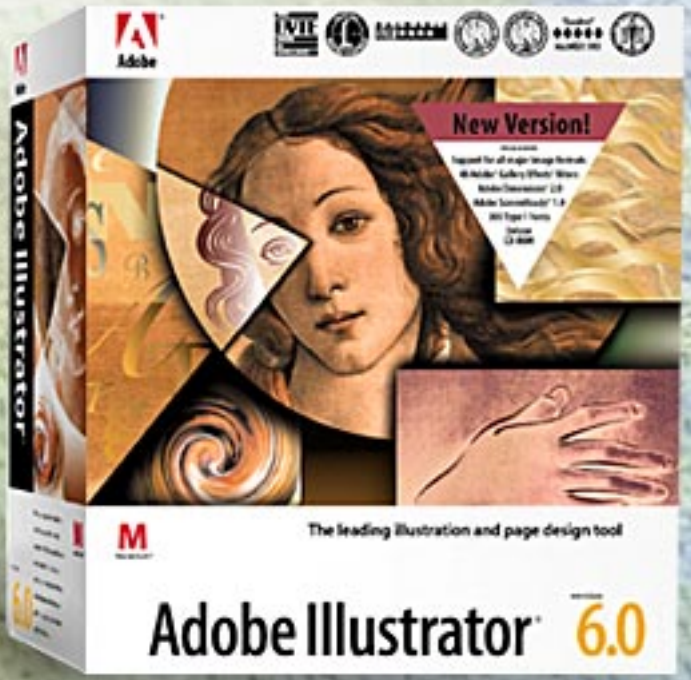
Creating an online publication involves preparing page elements, such as images or movies, in the programs you use to create and edit them. You can then assemble the page elements in a page layout program. To add interactivity, such as hypertext links, search support, buttons, and form elements, you need an electronic publishing program. The final requirement of an electronic publishing program is the ability to save your finished pages as HTML or PDF documents.



Adobe Illustration Programs

Adobe Illustrator provides a complete set of professional drawing tools and superior text-handling features that can create versatile art for many kinds of online documents. You can use Adobe Illustrator to draw high-precision EPS vector graphics for PDF pages, which you can magnify without loss of detail. You can also export Illustrator art as interlaced, transparent GIF files, ready to use on an HTML page. If you want to make additional adjustments to Illustrator art, such as color palette manipulation or image compression, you can open an Illustrator file directly in Adobe Photoshop.

With its support for spot and process color separations and trapping, you can also use Adobe Illustrator for professional-quality, print-on-demand documents.



Adobe Image-Editing Programs

Adobe Photoshop is the world's leading professional image-editing software that lets you retouch, composite, and color-correct scanned images or original artwork. You can prepare GIF or TIFF bitmap images for HTML or PDF pages by optimizing resolution, image size, color, and compression. For print-on-demand pages, you can use Photoshop to prepare an image for professional-quality color separations.

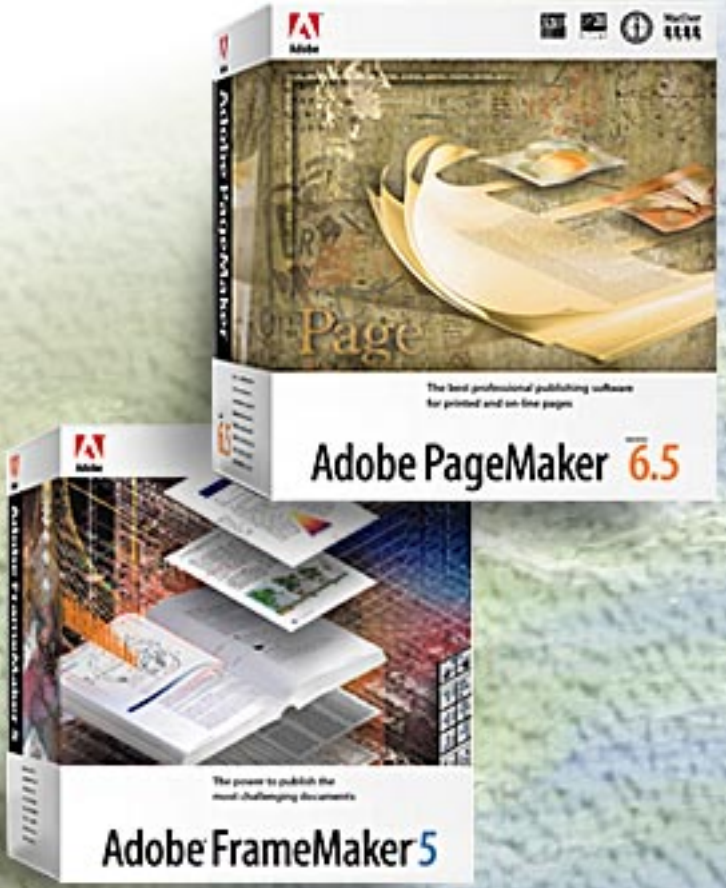
Adobe PhotoDeluxe provides everything you need to customize home photographs for online publishing. Guided projects quickly and simply step you through common changes, such as combining photos and adding special effects. You can save a PhotoDeluxe project as a GIF or TIFF file for use on HTML or PDF pages.

Adobe Page-Layout Programs

Adobe PageMaker is the professional, cross-platform page-layout program that makes it easy to design and produce graphically rich pages. Precise and flexible layout tools let you integrate text and graphics from many programs.

PageMaker lets you save a publication as a PDF document in a single step, while automatically creating bookmarks, article threads, and a fully linked table of contents and index. You can also create PDF links in PageMaker.

Adobe FrameMaker is the powerful book-publishing program for creating, maintaining, and distributing large, content-rich documents on all major computing platforms. Productivity-boosting features, such as automated cross-references and book-building, speed production of large projects. When you create a PDF document from a FrameMaker publication, hyperlinked text and graphics, and tables of contents and indexes are faithfully translated.



Adobe Video Editing Programs

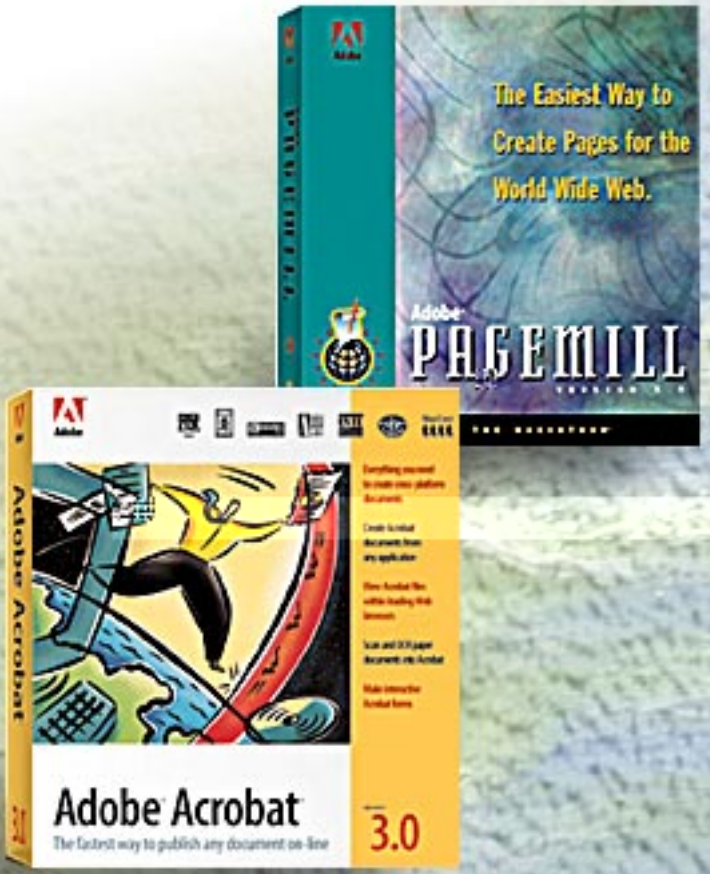
Adobe Premiere lets you easily edit video, audio, animation, photos, and graphics to create high-quality QuickTime or Microsoft™ Video for Windows digital movies, videotapes, and edit decision lists (EDLs). Special compression and optimization options help prepare movies that will be distributed online.

Adobe After Effects provides professional production tools for creating composites, 2D animation, and special effects for digital movies, broadcast video, and motion pictures.

Electronic Publishing Programs

Adobe Acrobat is the fastest way to publish documents online. Documents created in almost any application can be printed to Portable Document Format (PDF). Paper documents can be converted to PDF with a scanner and the Acrobat Capture plug-in, which recognizes and preserves text characters, graphics, and page layout. PDF documents can be distributed on the Web, over an intranet, as an e-mail attachment, or on a CD-ROM. You can view PDF documents using the free Acrobat Reader. Use Reader with a compatible Web browser to view PDF pages as Web pages.

Adobe PageMill and **Adobe SiteMill** let you design HTML pages for the Web without programming HTML. You can type and format text, insert graphics, drag and drop images from other programs, and create hypertext and graphic links. Adobe SiteMill includes PageMill and adds powerful link maintenance tools, so that you can manage a Web site quickly and easily.



Comparing HTML and PDF

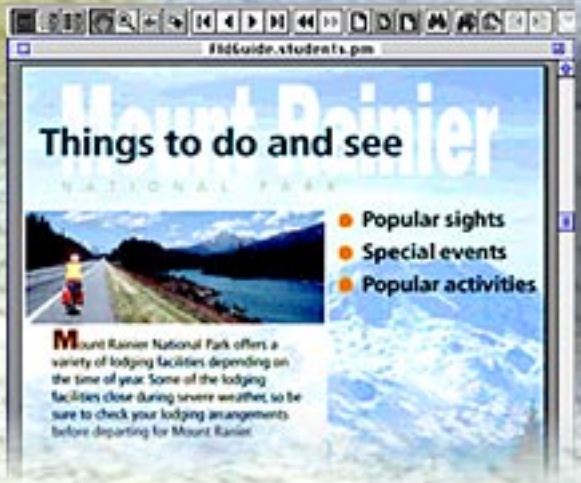
HTML

Web browsers read documents that have been created using HTML (Hypertext Markup Language). HTML was originally designed to allow rapid electronic exchange of research and correspondence over worldwide networks. When you create an HTML document, you identify each structural page element—such as heading or paragraph—by assigning a *tag*, or text marker, to it. Web browsers then format the page dynamically, using whatever fonts and window size the reader has specified for the browser on their computer.

PDF

Many electronic publishers also use Adobe Acrobat and its cross-platform file format, PDF (Portable Document Format), for maximum control over page design. PDF is based on the PostScript language, so you can design PDF pages in any application that can print. When you print or scan a page to PDF, you create an electronic snapshot of it, to which you can add links, movies, and other dynamic content. With Acrobat's compression, a page with graphics may be smaller in PDF than in HTML. You can also index libraries of PDF documents for rapid searching.

Comparing HTML and PDF



HTML

Structural design HTML identifies each element of a document using a set of structural tags.

Text reflow The length of a line of text on an HTML page wraps automatically to fit the browser window.

Browser control The look of an HTML document is determined by the HTML tags supported by the browser, and by the fonts and window size.

PDF

Visual design PDF stores compressed "snapshots" of the pages of a document, reproducing what you create exactly and consistently.

Page-based PDF maintains pagination and line endings across computers and platforms.

Design control PDF reproduces exactly the fonts, graphics, and layout of the original document.

Publishing with Adobe Acrobat: An Overview

DEFINING YOUR REQUIREMENTS

Design your publication around the capabilities of the distribution medium and the kinds of computers your audience uses.

MAKING PRODUCTION DECISIONS

Prepare type, graphics, color, and layout while keeping your publication compact and speedy.

CONVERTING DOCUMENTS TO PDF

Create a PDF file from your favorite graphics or layout program, or by scanning paper documents.

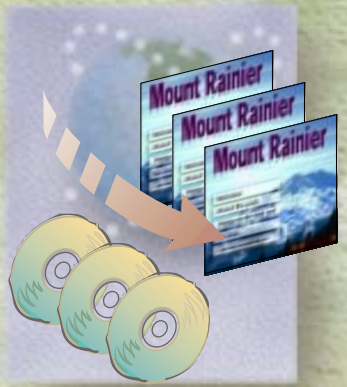
Publishing with Adobe Acrobat: An Overview

MAKING PUBLICATIONS INTERACTIVE

Add links, buttons, forms, and other controls to help users navigate and interact with your publication.

REVIEWING AND MODIFYING PDF PUBLICATIONS

Integrate PDF publications into your review and editing cycles.



DISTRIBUTING AND INDEXING PDF PUBLICATIONS

Set up PDF publications for easy access on the World Wide Web and on CD-ROMs.

Making 2 Publications Interactive

Overview

When you create a publication that you want to deliver electronically, it makes sense to take advantage of options that can do what paper can't. Acrobat includes a full set of tools for enhancing PDF documents with interactive controls such as graphic and hypertext links, forms, sound, and movies.

For many subjects, motion and sound may be better ways to present the information. Hypertext links can provide more direct access to relevant information as well as aid general navigation. Forms can be distributed and filled out electronically, and completed forms can be processed electronically, without the costs of printing and manual processing.

Navigation Controls

An online publication requires a way for someone to navigate through it. Acrobat provides a range of navigation options that you can combine freely:

- Controls built into Acrobat viewers may be all you need if your audience will simply turn pages sequentially or choose from one list of topics.
- Links and buttons can be used to create custom navigation controls, document maps, and other types of graphically oriented navigation.
- Indexes and tables of contents can be linked automatically from Adobe PageMaker® files and Adobe FrameMaker® publications.
- Acrobat viewers also provide navigation from the keyboard. For more information, see the Acrobat Exchange™ or Acrobat Reader Online Guide.

Navigation Controls Built into Acrobat Viewers

Acrobat provides several built-in navigation controls that can save you the time of building your own. Built-in controls are also an easy solution for projects such as archiving, where it is impractical to redesign every page.

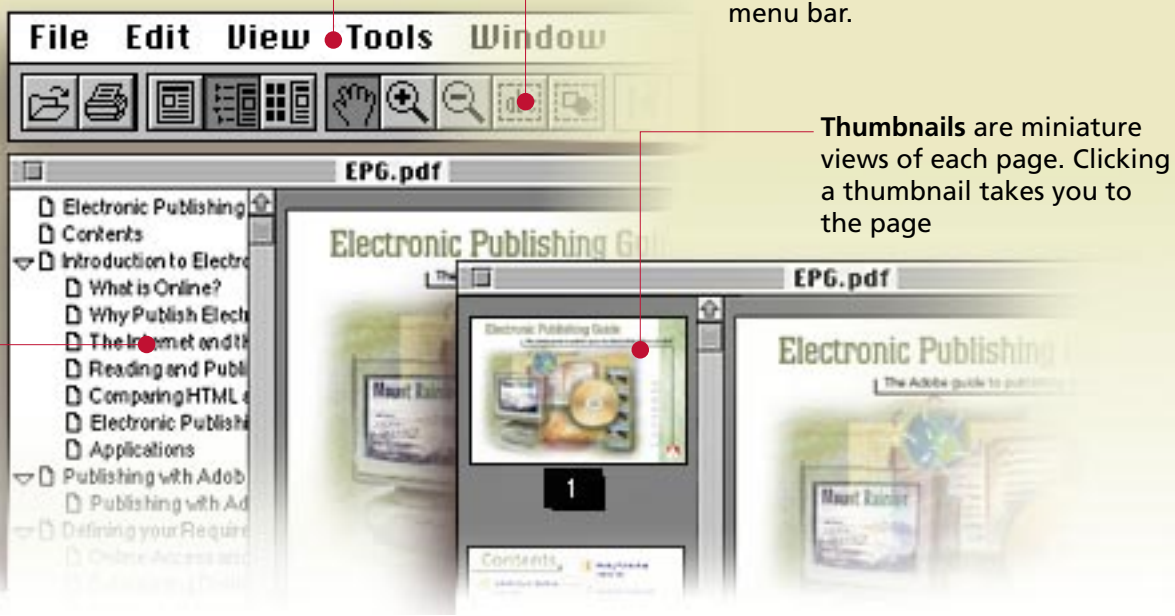
Navigation controls built into Acrobat Viewers

The menu bar contains commands for turning pages, changing magnification, and turning bookmarks and thumbnails on or off.

Bookmarks can represent headings or key topics. Clicking a bookmark takes you to the topic.

The toolbar contains many of the same functions as the menu bar.

Thumbnails are miniature views of each page. Clicking a thumbnail takes you to the page



Creating Custom Navigation Controls

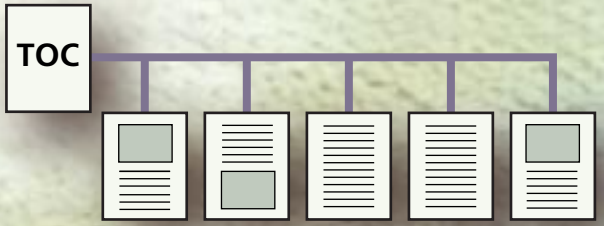
Custom controls can complement or replace the navigation tools built into Acrobat. Custom controls can also be part of a custom navigation system. Both approaches to custom navigation are made possible by applying links to text and graphics in Acrobat Exchange. When you create custom controls with links, be sure to plan for link maintenance to keep links from breaking.

You can use the form tool in Acrobat Exchange to add custom buttons that can change the page view or execute commands. For more information, see the Acrobat Exchange Online Guide and the Acrobat Presentation Tutorial.

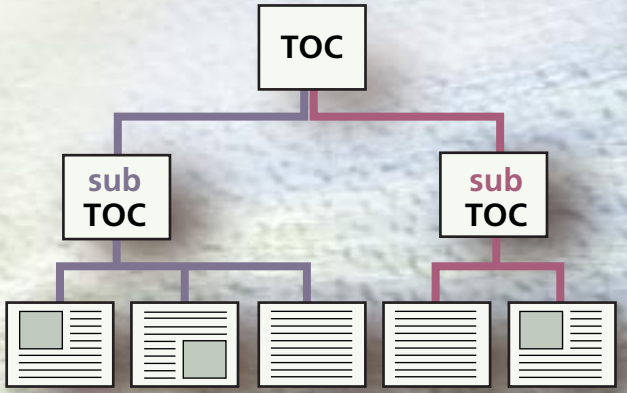
Custom navigation controls can augment Acrobat's built-in controls.

Creating Custom Navigation Structures

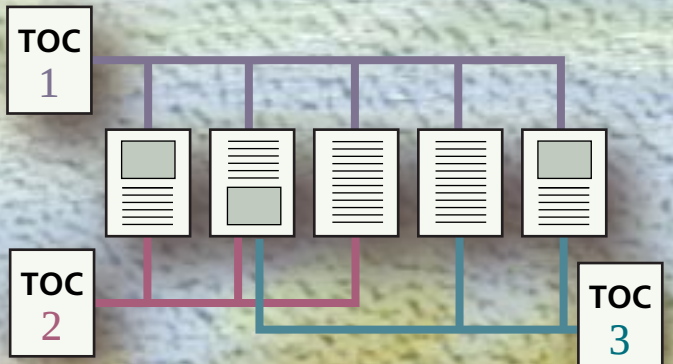
Sometimes your audience is diverse enough to require different paths through a publication. For example, an online textbook can contain three different navigation schemes: for student exercises, answers, and instructor notes. You can create one publication with sets of buttons or tables of contents that are customized for different audiences, without having to reorganize the information. Simply create each set of controls as a page with a specialized group of links.



Traditional book



Hierarchical organization



Tables of contents for different audiences

Adding Links and Cross-References

In online publications such as Web pages, links are cross-references which lead to another part of the same publication or to another resource on the network. You can create a link in a PDF document using Acrobat Exchange.

If you use Adobe FrameMaker, you can generate cross-references that are automatically linked when FrameMaker generates a PDF publication. Instead of turning pages to find the source of a cross-reference, a person can simply click the cross-reference. For more information, see the FrameMaker documentation.

You can call attention to links by changing their appearance. The rectangular links you create in Acrobat Exchange can be visible or invisible. You can also change type character styles in Acrobat Exchange using the touch-up tool. See the Acrobat Exchange Online Guide for more information.

It's a good idea to indicate linked text or graphics by distinguishing them visually.

Linking Tables of Contents and Indexes

When generating a PDF document, Adobe PageMaker 6.0 and FrameMaker 5.0 can convert table-of-contents entries into PDF bookmarks so that you don't have to create them in Acrobat Exchange. PageMaker and FrameMaker can also link every table-of-contents and index entry to its page reference—a quick way to link even a highly designed table-of-contents page. For more information about tables of contents and indexes, see your PageMaker and FrameMaker documentation.

In some cases, page numbers in a PDF publication may not correspond to page numbers displayed in the table of contents and index. If this occurs, you may need to adjust page numbering (see Numbering Pages).

Maintaining Links

When you add a link to an electronic publication, you also become responsible for making sure the link does not break. Electronic publications can be updated more frequently than print publications, and a mistake during an update can break a link. You can update a broken link using the link tool in Acrobat Exchange. However, updating a large number of broken links can be time-consuming, so it's better to design an electronic publication in a way that accounts for updating links. Try the following suggestions:

- Design content in page-sized chunks to make it easier to update PDF publications by simply replacing pages instead of the whole publication. See Making Corrections and Preserving Links When You Replace Pages.
- Minimize the number of links you create manually and maximize the use of links that are automatically generated by a source program, such as Adobe PageMaker or Adobe FrameMaker. Automatically generated links are always correct when you create a new PDF document from the source publication.
- If you're creating a CD-ROM, verify every link before pressing the disc. After the disc is pressed, the read-only nature of CD-ROM prevents links from breaking within the disc itself. When you link from a CD to files stored elsewhere, choose filenames and Uniform Resource Locators (URLs) of link destinations that are not likely to change, because you cannot update the links on a CD-ROM except by sending out an entirely new disc.

Preserving Links When You Replace Pages

PDF links exist on a separate layer atop the page, and are positioned by page coordinates, allowing a link to span any area regardless of the content type. An HTML link works differently—it is attached to and moves with specific text or a graphic. The difference between the two doesn't affect a publication unless you update a page by replacing it in Acrobat Exchange.

Replacing a page replaces the content layer but not the link layer. If linked text or graphics on the updated page are in a different position from the previous version, use the link tool to move the link objects to line them up with the updated text or graphics. If a new version of a document contains a different number of pages, insert blank pages to keep pages aligned to existing link layers.

Original links on page

Original links remain after page is replaced

Links moved in Acrobat to align with new design

Setting Up What a Reader Sees First

When you pick up a paper document, you always see its cover first. In a PDF publication you can control what the reader sees first with the Document Info > Open command.

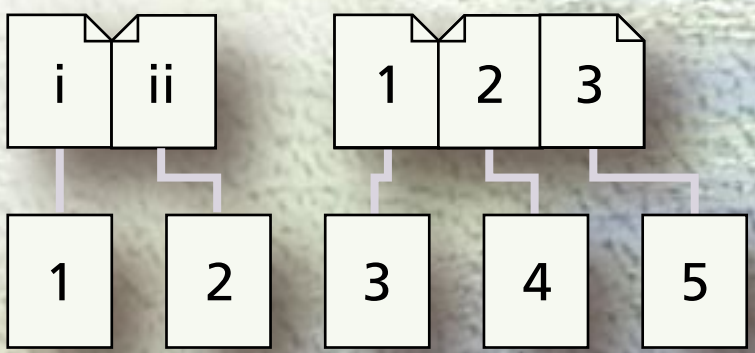
For example, for a document that contains custom navigation controls, you might want to set the document to open in full-screen view with no Acrobat tools visible. You can also set it to open to an introductory screen that could be any page in the file.

For other documents, you might want to set the document to display the toolbar and bookmarks or thumbnails, or set the document window so that pages scroll in a continuous stream instead of turning.

Numbering Pages

When you refer to a page number in a PDF publication, be aware that the page number in the PDF publication may not match the page number in the original document.

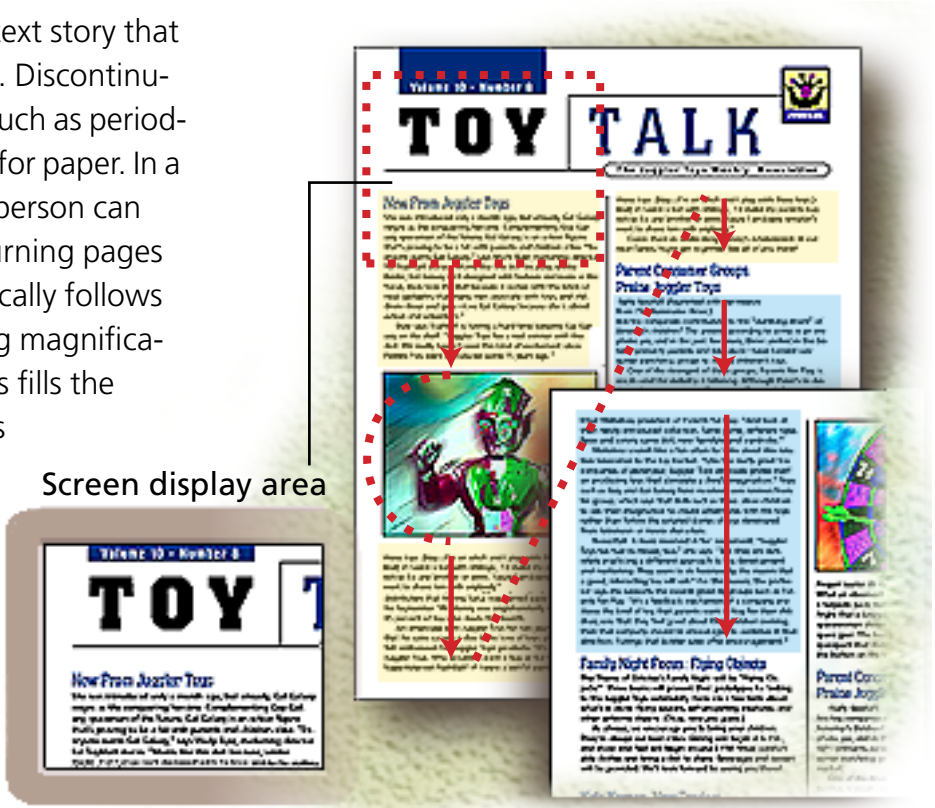
A PDF publication always starts on page 1, and supports only one page-numbering sequence per file. In addition, PDF files support only arabic numerals. This is a problem only if your publication starts on a page number other than 1 or uses more than one page-numbering system, such as roman numerals for the front matter and arabic numerals for the body. If you are publishing this kind of document, plan to resolve page-numbering issues. For example, you might decide to separate the publication into two PDF files, each with its own page sequence. Thoughtful use of cross-document links can tie the publications together seamlessly.



Linking Parts of an Article

Use article threads to connect a text story that jumps across columns or pages. Discontinuous text is common in publications, such as periodicals, which were originally designed for paper. In a properly prepared PDF document, a person can read an article without scrolling or turning pages manually, because Acrobat automatically follows the article wherever it goes, adjusting magnification so that the article column always fills the screen. You can create article threads automatically from applications such as Adobe PageMaker or Adobe FrameMaker. For more information about article threads, see the Acrobat Exchange Online Guide.

Article threads make paper publications easier to read on-screen, even across pages.



Collecting Data with Forms

A PDF publication can contain forms that use the same kinds of form fields provided by HTML. People can then use Acrobat or a compatible Web browser to fill out a form online and submit it over the World Wide Web. A PDF form can be stored on the World Wide Web, on an in-house network server or intranet, or on a CD-ROM. Unlike HTML, a PDF form can match the printed version exactly, and data can be saved with or without the form. For more information, see the Acrobat Exchange Online Guide.

You can create PDF forms using the form tool in Acrobat Exchange. You can also use the form tool to create buttons that perform actions, such as linking, printing, or quitting the viewer. See the online guides or the Presentation tutorial for more information.

PDF forms provide complete design freedom and identical screen and paper versions.

Making Efficient Movies

A movie is like a stack of still bitmap images presented very quickly in sequence. Accordingly, many techniques that make efficient still images also apply to movies. As you edit your movie, use a tool such as Adobe Premiere's Movie Analysis command to see if the movie's data rate is achievable by your medium. If it is too high, try the following:

- Minimize the duration. Edit a movie so that it is no longer than absolutely necessary.
- Minimize resolution. 320x240 pixels is common for a double-speed CD-ROM. Internet data rates are so slow that 160x120 pixels or lower may be necessary.
- Minimize the frame rate. 10 frames per second is often smooth enough.
- Minimize bit depth. 24-bit color is usually more than you need. Most QuickTime movies are 16-bit. Simple animations can use fewer colors.
- Keep the camera steady. Camera movement changes every pixel in the frame, making compression less efficient. Shoot original footage with a tripod and avoid panning the camera.
- Use cuts or hard-edged wipes. Transitions that change opacity introduce additional data that increase the file size and data rate.
- Minimize visual noise. Shoot original footage on high-quality equipment. Lower-quality video adds unwanted variations in color that increase the file size. If noisy footage can't be reshot, try applying a Gaussian blur in Premiere or After Effects to smooth colors.
- Compress the movie. To achieve the low data rates necessary for CD-ROM or Internet publishing, apply video compression such as Cinepak™. Compression options vary; see the documentation for your movie-editing program.

Movies for CD-ROM and the Internet

Movie for CD-ROM

Play Movie

Resolution: 320x280
Frame rate: 15fps
Data rate: 300KBps

Bit Depth: 16-bit
Size: 6MB

Movie for the Internet

Play Movie

Resolution: 160x120
Bit depth: 8-bit
Frame rate: 10fps
Size: 895k
Data rate:

Including Sound

Sound can present certain kinds of information, such as the correct pronunciation of a word, most effectively. Acrobat embeds sounds inside a PDF file, except for sounds in QuickTime format, which are stored separately and linked.

Although sound takes up less disk space than movies, your goal is the same as with movies: Aim for the smallest file size that preserves acceptable quality. To reach that goal, try these adjustments:

- Lower the sample rate, which is the number of samples per second of sound. A higher rate provides better sound but uses more disk space. Audio-CD-quality is 44.1kHz, but for the Internet try a sample rate of 11 or 22kHz.
- Lower the bit depth. More bits per sample increases the range and detail of sound at the expense of disk space. CD-quality sound is 16-bit, but 8-bit sound is often acceptable.
- Compress the sound file using a method supported by the file format. You can usually specify the *compression ratio*, or degree of compression. Voice may sound acceptable at a 5:1 ratio. Higher-quality sound may require a ratio such as 3:1. A lower ratio create a larger sound file.

When recording sound, start with a strong, undistorted signal recorded on studio-quality equipment, because it will be easier to preserve quality when you downsample and compress the sound. For example, if you plan to create 8-bit files at 11kHz, record and edit at a higher bit depth and sample rate.

For more information about adding sound, see the Acrobat Exchange Online Guide.

3 Making Production Decisions

Overview

Once you have identified the audience for your publication, you can begin to make the formatting and production decisions that will help make the publication attractive and easy to use. If you're republishing a document online that already exists on paper, you'll inevitably weigh the benefits of reworking the design against the time and cost required to do so. If your publication will be read both on screen and on paper, you may have to make the design accommodate the different requirements of on-screen and paper output.

The formatting considerations of on-screen publications—fonts, page size, layout, color, resolution—are the same as those of other kinds of publications; however, each element

must be re-evaluated in the context of on-screen viewing. Decisions about issues such as color and resolution, which in traditional publishing may require a trade-off between quality and cost, may require a parallel trade-off between quality and file size.

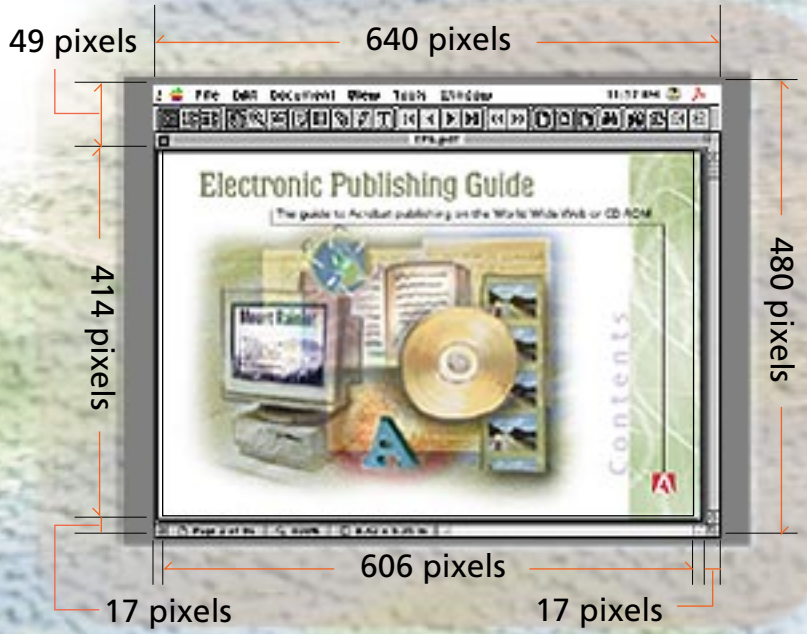
Page Size and Layout

The final form of your publication determines the page size and layout you'll use.

If a publication will be distributed online for occasional printing on paper, your page size should match a standard paper size.

If you're designing a publication that will only be viewed on-screen, the size of a page depends on many factors:

- To eliminate scrolling and zooming, design pages that fit the smallest screen size your audience will use. Most small monitors that ship with Macintosh and Windows computers are 640 by 480 pixels in size.
- If you want to display navigation controls—such as the Acrobat toolbar, bookmarks, thumbnails; or your own buttons—use a page size that leaves room for the elements you want to display. If your PDF documents will be served as Web pages, also account for the screen space occupied by the user-interface of your target browsers.



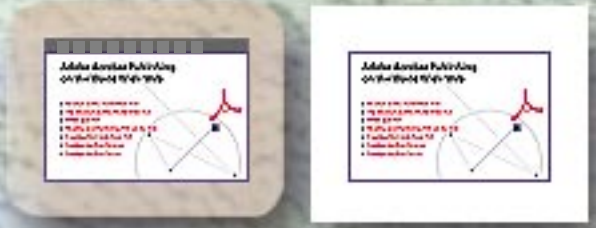
Screen size – User-interface = Page size

When pages must be ready for both printing and on-screen viewing, try the following strategies:

- Design a wide page that fits the screen, which you can print 2-up (two screens per sheet) on tall paper. 2-up printing is a feature of the LaserWriter printer driver (Macintosh) and the Adobe Printer Driver (Windows).
- Design a tall page for on-demand printing, fitting the visible width within the screen so that only vertical scrolling is necessary.
- Design a wide page for the screen, which can be printed on wide paper.

Page designed for on-demand printing, and viewed on-screen at 640 x 480 pixels

Page designed for the screen, and printed using 2-up option



Page designed for the screen, and printed using the Landscape (Wide) option

Ensuring Readability On-Screen

For body text, serif fonts have traditionally been used in paper documents, and continue to be a good choice for electronic publications that readers will print. However, for body text that will be read on-screen, sans-serif fonts are typically easier to read because of their simpler shapes.

For headlines and display type, you can choose the same typeface for both paper and screen viewing because display type is large.

The low resolution of the computer screen changes the rules for type in general:

- Use larger type than in print. Twelve-point type, often too large for body text on paper, is generally the minimum acceptable size for monitor display. Type in this publication is set at 12 points.
- Use more leading (line spacing) than you would in print. Avoid using the default leading value in many desktop-publishing applications because it is usually intended for paper pages. Type in this publication is set at 16.5 points of leading.
- Choose a typeface with letter spacing that appears evenly on-screen without modification. The coarse computer screen makes fine spacing adjustments difficult. Type in this publication is set in Frutiger.

In PDF publications, type displays clearly at all sizes, even when zoomed in. In addition, Acrobat Reader and Exchange can *anti-alias*, or smooth the edges of type, for maximum clarity. For more information, see the Acrobat Exchange Online Guide.

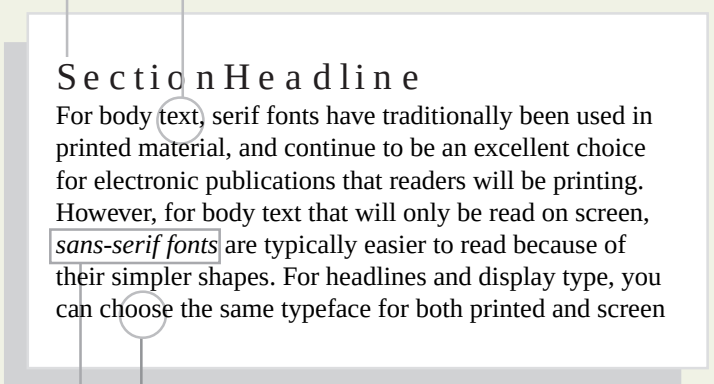
Choosing Type for On-Screen Display

	Less Readable		More Readable	
Display Type	script	Kuenstler Script	bold sans-serif	**Frutiger**
	Italic	*Garamond Italic*	bold sans-serif	**Univers**
	condensed	Arcadia	bold slab-serif	**Memphis**
	thin-serif	M a d r o n e	semi-bold serif	Garamond
	extra bold	Frutiger Ultra Black	medium sans-serif	**Boton**
Text Type	serif	Times Roman (text sample)	sans-serif	Frutiger (text sample)
	Italic -serif	*Times Italic text sample)*	sans-serif	Univers (text sample)
	bold san serif	**Myriad Bold (text sample)**	sans-serif	Myriad (text sample)
	light san-serif	Myriad Light (text sample)	light slab-serif	City (text sample)
	condensed	Myriad Condensed (text sample)	square-face	Eurostyle (text sample)

Online Type Makeover

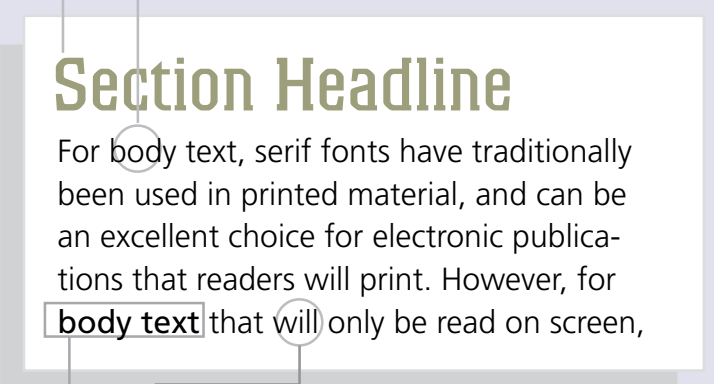
Before

1. This headline is too bold. The characters are hard to read at this size.
2. Serif text is hard to read at this size.
3. This small text is 10 pt on 12 pt leading.
4. Italic fonts are hard to read at this size.



After

1. This headline, larger and with more open characters, is easier to read.
2. Sans-serif text is easier to read .
3. This larger text is 12 pt on 16 pt leading.
4. Bold for emphasis is easier to read.

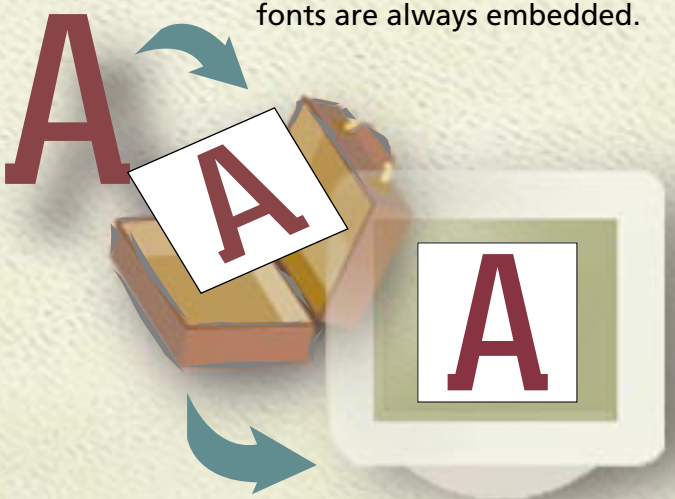


Preserving Type Quality

Adobe font technology preserves type quality on a computer that doesn't have the fonts used to create the publication. For more information, see the Acrobat Distiller Online Guide.

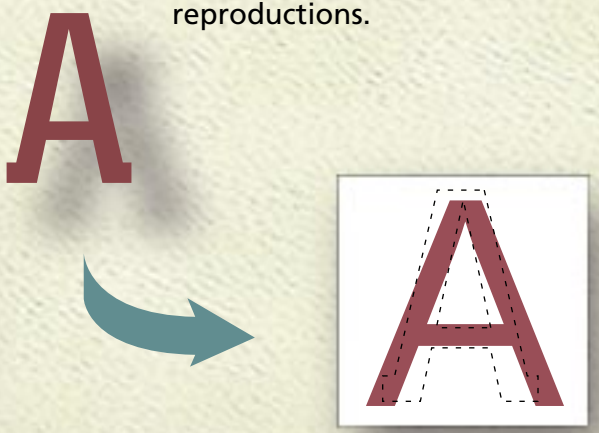
Embedding

Acrobat automatically embeds PostScript fonts, saving space by including only the characters actually used. You can choose not to embed a font; however expert and symbol fonts are always embedded.



Substituting

If you choose not to embed a font, Acrobat simulates it to preserve line lengths and page layout. Simulated fonts save disk space and resemble the original, but are not exact reproductions.



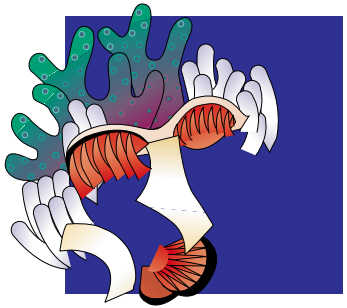
Bitmap Images and Vector Graphics

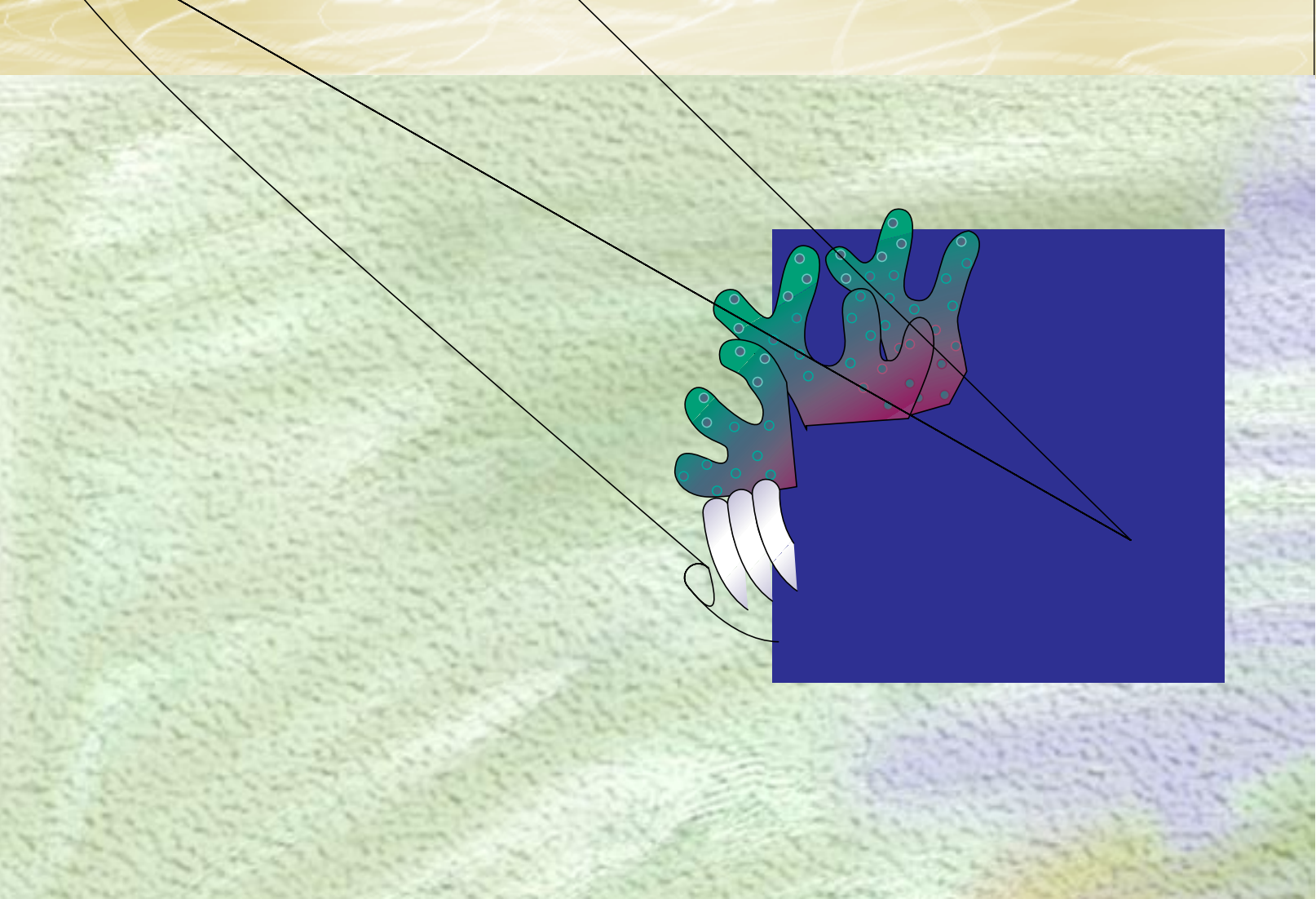
Computer graphics can be stored as bitmap images or vector graphics. You can use both kinds of artwork in a PDF publication, though a vector image may display faster if you rasterize it.

Bitmap images, such as photographs, describe shapes using a grid of pixels. In a bitmap image, the number of pixels is fixed and you can edit each pixel individually. Bitmap images are also called paint graphics or raster images. You create and edit bitmap images in painting or image-editing programs such as Adobe Photoshop.

Vector graphics, such as technical illustrations, describe shapes using mathematical expressions. Vector graphics are resolution-independent—the number of pixels used to display a vector graphic is determined by the resolution of the monitor or printer and not by the graphic itself. This is because a vector graphic is not converted to pixels until it is displayed or printed. You create and edit vector graphics in drawing applications such as Adobe Illustrator. Outline fonts, such as Type 1 PostScript fonts and TrueType fonts, are also stored in vector form. Vector graphics are sometimes called draw graphics, outlines, or paths.

Click the plus button to magnify these graphics.



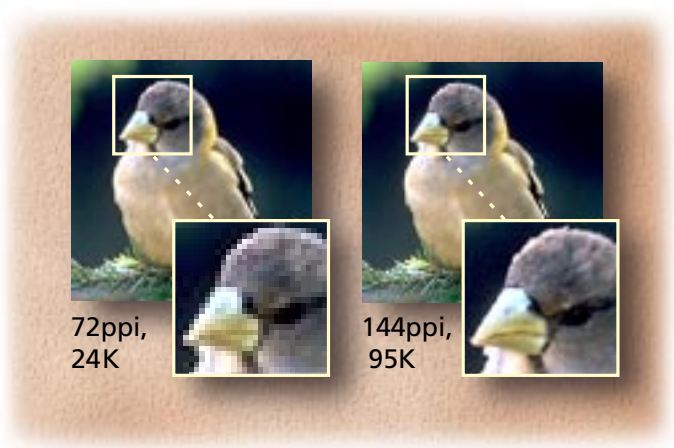


Resolution and File Size for Bitmap Images

In computer graphics, a key factor affecting image display and file size is *resolution*. Computer and video-production professionals use the term resolution to refer to the number of pixels that describe a bitmap image.

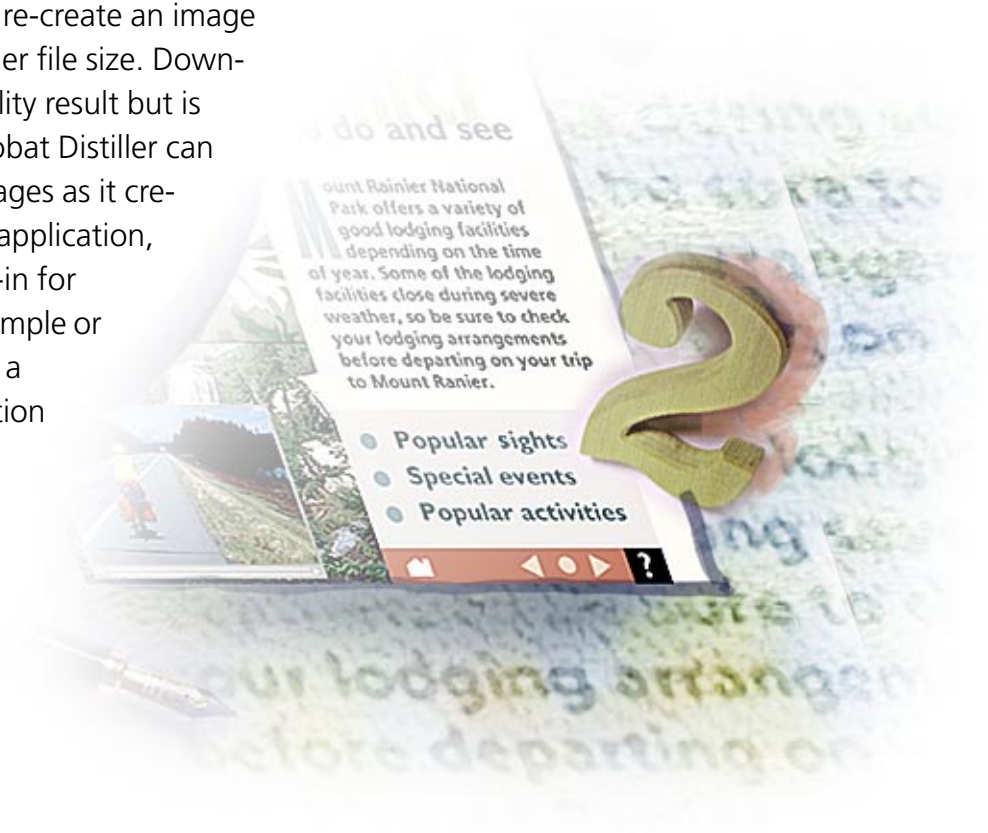
The number of pixels in a bitmap image is expressed by the horizontal and vertical dimensions of the image in pixels, for example, 640x480. In the print-publishing industry, the definition of resolution is expressed in terms of the pixel density in pixels per inch (ppi) or dots per inch (dpi). The resolution determines how detailed the image appears when magnified, so adjust the resolution by the magnification factor you want. For example, if you want an image to look good at 200% on the 72 dpi screen of a Macintosh, use a 144 dpi version of the image. If your audience will not have to magnify an image, using a higher resolution than the monitor wastes disk space and makes the image display more slowly.

When you increase the pixel dimensions, the number of pixels and the file size increase geometrically. For example, a 200-by-200 image contains 40,000 pixels, or four times the data of a 100-by-100 version of the same image, which contains 10,000 pixels.



At 100% magnification, resolutions higher than monitor resolution waste disk space.

If the resolution of images in a publication is already higher than the output requires, you can reduce the resolution through downsampling or subsampling. Both techniques re-create an image at a lower resolution and smaller file size. Downsampling produces higher-quality result but is slower than subsampling. Acrobat Distiller can downsample or subsample images as it creates a PDF document from an application, and the Acrobat Capture plug-in for Acrobat Exchange can downsample or subsample images in a scan of a paper page. For more information about downsampling and subsampling, see the Acrobat Distiller Online Guide.



Including Screenshots in a Publication

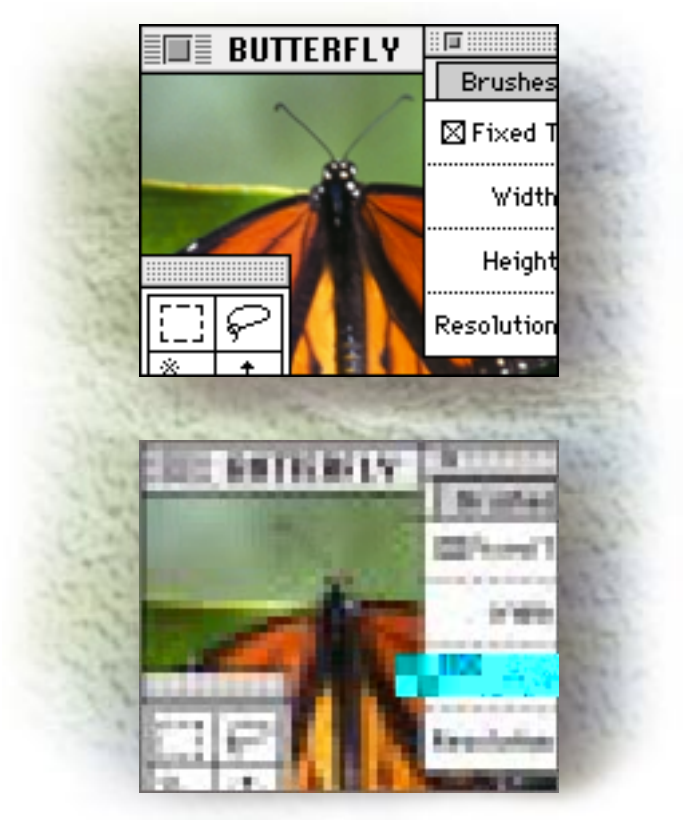
A *screenshot* is a bitmap image made from a monitor display. A screenshot is already at its lowest readable resolution, so it may need special settings for compression and sampling.

If a screenshot is scaled to less than actual size or contains a color or grayscale image, Distiller may automatically apply downsampling and JPEG compression. Both adjustments reduce screenshot quality.

If screenshots display poorly, do the following:

- Include screenshots at actual size.
- In Acrobat Distiller, turn off automatic compression, downsampling, and subsampling. Instead, turn on LZW or ZIP compression.

If you will use only a few screenshots, another option is to re-create them in a vector drawing program such as Adobe Illustrator, so that you can scale them to any size without losing quality.



Downsampling and JPEG compression can reduce the quality of screenshots.

Graphics File Formats

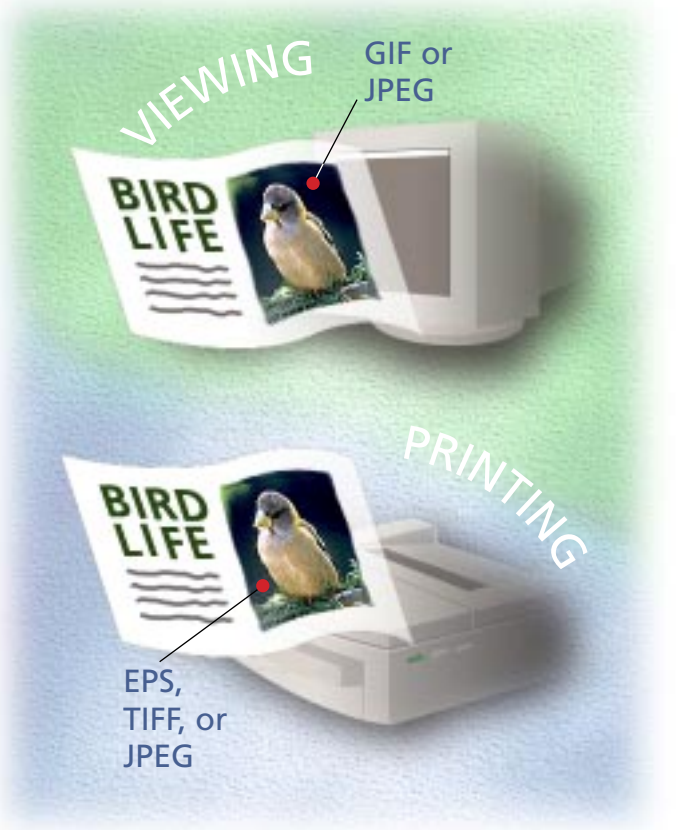
Because Acrobat can create a PDF from any application that can print, the range of graphics file formats you can use is limited only by your page-creation software. However, some file formats are better suited for particular media.

If your publication is intended to be viewed on-screen, use file formats with good on-screen color fidelity in a small file size, such as Graphics Interchange Format (GIF) and Joint Photographic Experts Group format (JPEG).

If your publication is intended to be printed on demand, use file formats that print colors faithfully at high resolution, such as EPS, TIFF, and JPEG.

Other graphics file formats work well for general on-screen viewing or printing on desktop printers.

When you save a graphic and specify a file format, you will often set compression as well. For more information, see Compressing Images.

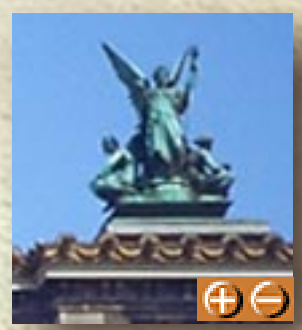


Compressing Images

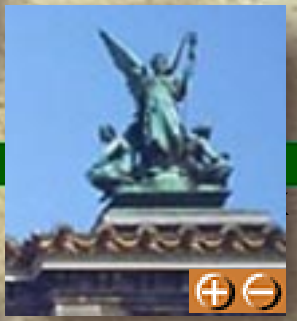
Making bitmap images small enough for network distribution or for mass storage on CD-ROM generally requires *compression*—saving images in a way that uses less disk space.

For continuous-tone images such as photographs, JPEG Medium compression (the Distiller and PDF Writer default) saves a lot of space with little loss of quality. You can choose different Acrobat compression settings to fine-tune the balance between image quality and file size. For more information about compression settings, see the Acrobat Distiller Online Guide.

Original Image



Original, 151K



JPEG Medium, 21K

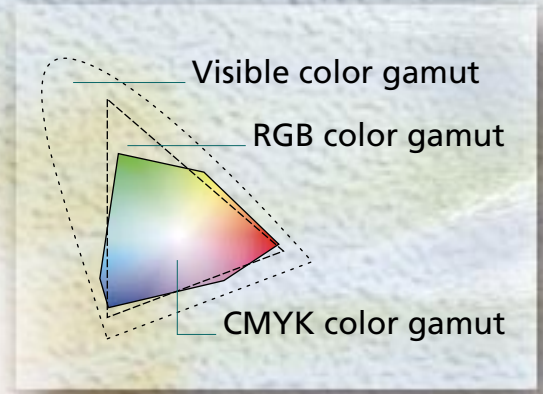
JPEG High, 18K

Comparing Color on Paper to Color On-Screen

In an electronic publication, two factors affect color reproduction: the audience's video hardware and the color models that make an on-screen publication look different from a paper equivalent.

Most standard Windows and older Macintosh monitors rely on 8-bit color and so can display a total of 256 colors. Newer Macintosh monitors display 16-bit and therefore thousands of colors; most high-end systems support 24-bit color cards, which display millions of colors.

Monitors and printers reproduce color using different color models. Monitors use the red, green, and blue (RGB) color model, which is based on the additive properties of lights of these three colors. Printing on paper uses the cyan, magenta, yellow, and black (CMYK) color model, based on the subtractive properties of the four inks reflected from paper. The components of each color model



produce a different subset of the full visible color spectrum. This is why colors on-screen may look different reproduced in print and vice versa.

Because RGB images display more quickly and use less RAM and disk space, Acrobat Distiller converts CMYK images to RGB by default. If you include CMYK images in a publication to be process-color separated, turn off RGB conversion using the Job Options command in Distiller.

Distiller never converts CMYK values in colored text and vector graphics. If you want these types of objects to use RGB color values, specify their color in the original program.

Using Indexed Color

If you are designing a new publication intended primarily for viewing on color monitors, you can speed up page display by converting color images to *indexed color*, a color storage method that supports a bit depth of up to 8 bits (256 colors). The GIF file format uses indexed color. Indexed color is not recommended if you intend to color-separate the publication.

With indexed color you can fine-tune the balance between file size and image quality by using fewer than 256 colors. Some images look fine at 6 bits (64 colors) or less. To adjust the number of colors in an indexed-color image, you must specify an adaptive palette.

Converting an image to an indexed color palette requires a utility or image-editing application, such as Adobe Photoshop. For more information, see the Adobe Photoshop User Guide.

24-bit PICT, 67k

GIF indexed to 6 bits, 15k

Save disk space by reducing bit depth to the lowest level acceptable to your audience.

Adaptive and System Palettes

When you convert an image to indexed color in a conversion utility or image-editing program, you can specify up to 256 colors for image display. You also specify whether you want to use an adaptive or system palette.

An adaptive palette is a custom palette derived from the 256 most-used colors in an image. A system palette converts colors in the image to colors most similar to those in the palette used by the operating system on which you created the image.

Because an adaptive palette is custom-tailored for each image, it can more effectively represent the original colors on an 8-bit monitor. Consider using a system palette only when you use applications that do not support adaptive palettes.

4 Converting Documents to PDF

Overview

For documents already stored on a computer, creating a PDF document can be as easy as choosing the Print command. To accommodate the wide range of documents that people publish electronically, Acrobat software provides two ways to print to PDF—Distiller® and PDF Writer.

You can even turn paper documents—from correspondence to years of filed-away records—into fully portable, searchable electronic documents by using the Capture™ plug-in in Acrobat Exchange.

Creating a PDF Document from a Paper Document

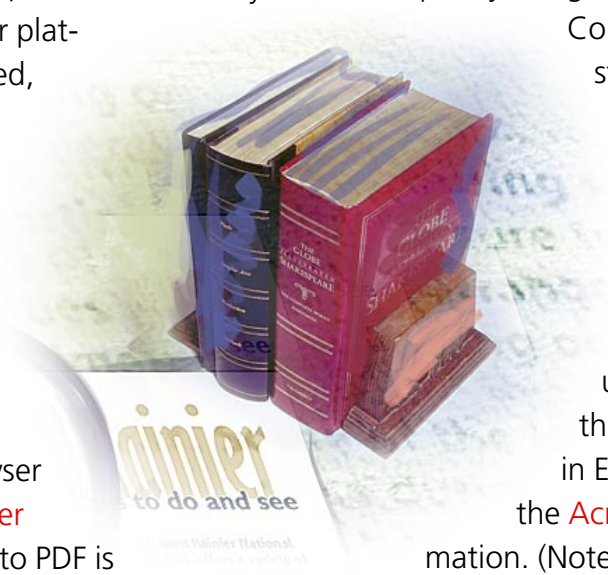
Electronic publishing isn't limited to publications created on a computer. Acrobat Capture converts paper to PDF using a process called optical character recognition (OCR) to create editable text from pages you scan. Unlike other OCR methods, Capture also recognizes page layout, formatting, and graphics to create an exact replica of each original page.

Capture creates compact PDF documents that can be viewed, printed, and searched by anyone with a Windows, Macintosh, or UNIX version of Acrobat Reader. Acrobat Exchange includes the Capture plug-in for individual conversions to PDF. You can also automate large electronic-archiving projects or save in formats other than PDF using the full Acrobat Capture product. For more information, see the Adobe Home Page.

Converting between PDF and HTML

You usually don't need to convert between PDF and HTML. Like HTML, PDF is readable by free programs on all major platforms and can be published, viewed, and searched directly over the Web.

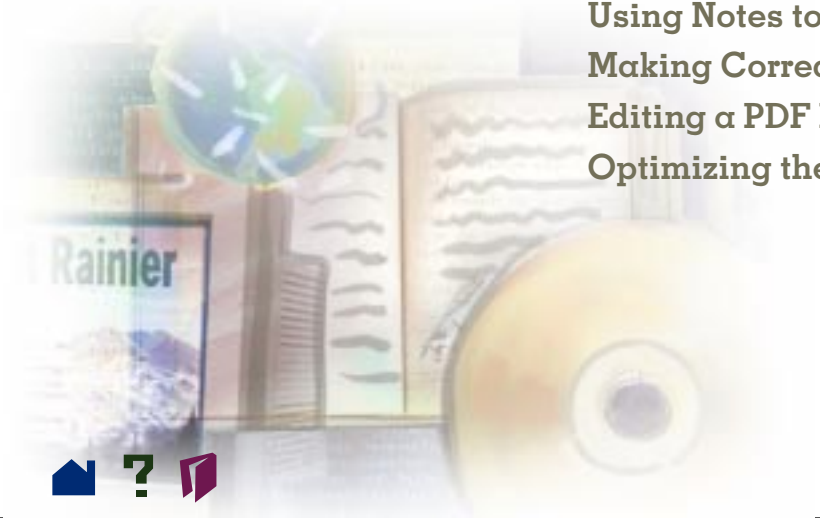
In some cases it may be useful to convert HTML to PDF. For example, if you want to keep local copies of HTML Web pages, you can convert them directly from a browser to PDF using the PDF Writer printer driver. Converting to PDF is superior to saving a page with the browser's Save As command, for several reasons:



- PDF includes all of the images on the page.
- PDF supports compressed text and graphics, so a PDF page may use less disk space than an HTML equivalent.
- You can search PDF versions of HTML pages quickly using Acrobat Catalog and Search.

Converting PDF to HTML is less straightforward—PDF can lay out a page in many ways that are not supported by HTML. If you just want to displays PDF content in a Web browser, no conversion is necessary. If you want to copy text and graphics into other documents or programs, you can use the text and graphics selection tools in Exchange and Reader. See the Acrobat Online Guide for more information. (Note: When you copy a Web page or its elements, make sure that your use does not violate copyright laws.)

5 Reviewing and Modifying PDF Publications



Overview

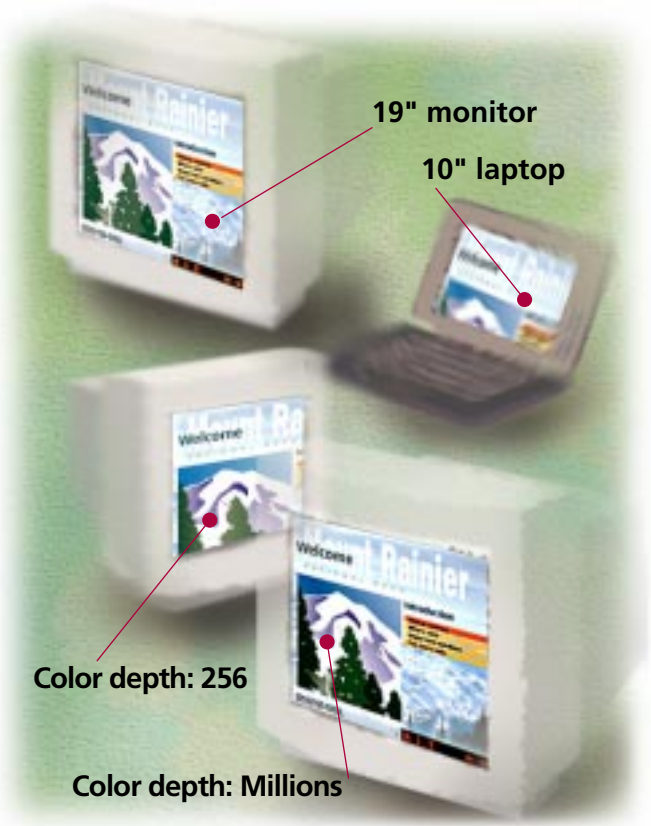
Editing and review are as much a part of producing electronic publications as they are for print. Reviewing an electronic publication can be more complex than reviewing a printed publication, for when you create an online publication, you create software. Issues such as navigation, display speed, and file size must be reviewed in addition to text and graphics.

Tools included in Acrobat can simplify some areas of publication review and revision. For example, the Acrobat notes tool can facilitate online review cycles, and you can sort pages more easily using thumbnails.

Testing

In contrast to a printed publication, a review cycle for an online publication must also test how well the publication works as software. For example, you need to test for the following:

- Do the default page view and links to specific page views make sense on different monitor sizes and resolutions or in a Web browser window?
- Can a person navigate the publication easily?
- If you're distributing over the World Wide Web, do pages download over a modem quickly enough?
- Do all the links and buttons work, both within a publication and to other publications?
- Are colors acceptable when viewed on monitors of different color depths or across platforms?
- Are articles connected in the right order?



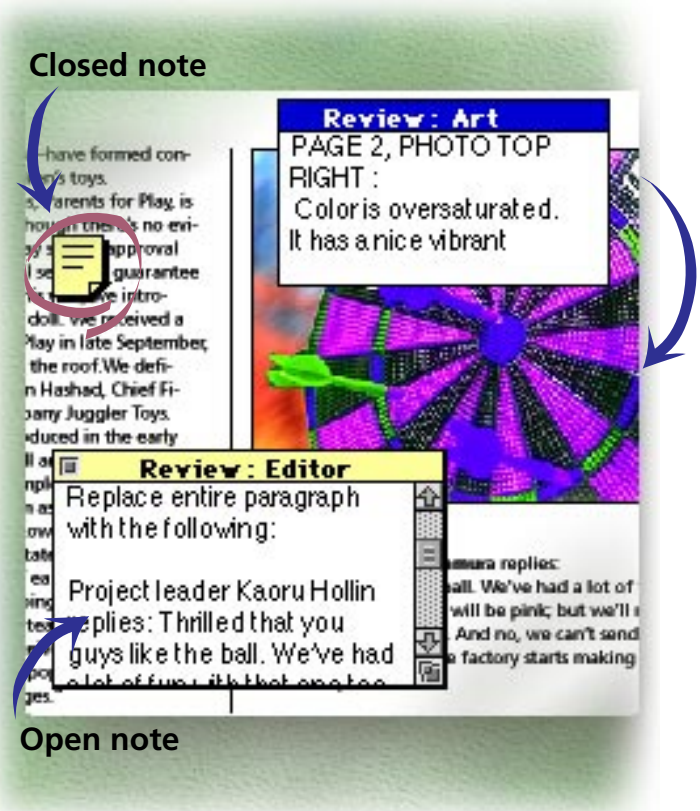
Test thoroughly across the range of hardware configurations your audience may own.

Using Notes to Gather Reviewer Comments

During a review or testing cycle, comments can be attached and collected online using the notes tool in Acrobat Exchange.

To make a comment, a reviewer uses the notes tool to add a new note on any page in the PDF document. If the note refers to a specific passage of text, it's a good idea to copy and paste the original text into the note window with the comment.

Reviewers can customize their notes with labels or names, colors, and fonts. Reviewer can then export their notes to a file, and the author can import them to collate all notes in a single document. The author can also use the Summarize Notes command to create a list of comments and the pages where the comments appear. See the Exchange Online Guide for more information.



Making Corrections

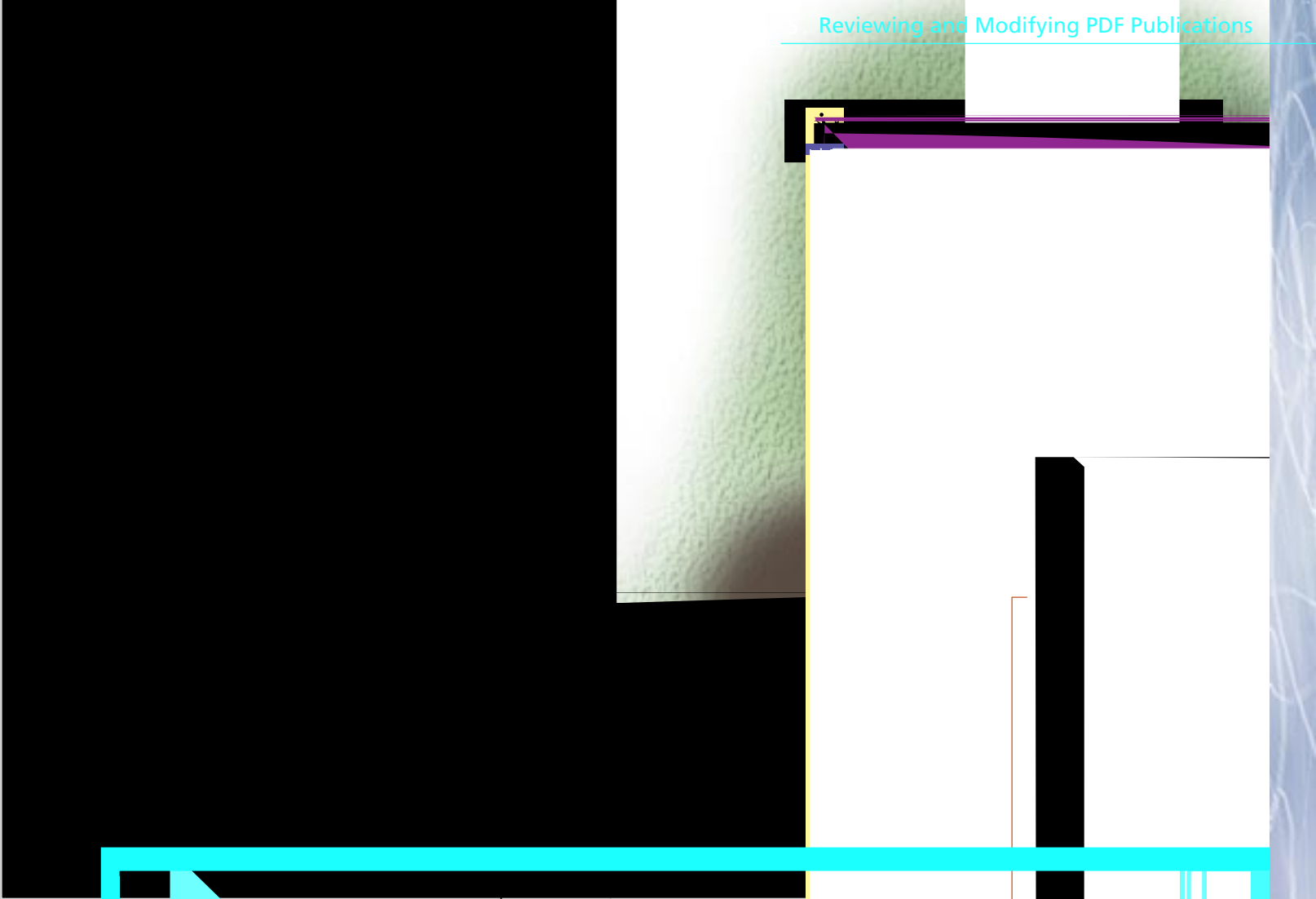
The way you make corrections to an Acrobat PDF file depends on the nature and scope of the changes. If you want to change one or two words, such as a name, and you've installed the fonts that were used to create the document, you can use the Acrobat Exchange touch-up tool.

For more extensive text changes or changes to graphics, edit the source document in the application that created it, and generate a new PDF document—the same method you would use to update a printed publication. For example, if you created a PDF from a PageMaker file and you want to revise several sections of text, revise them in PageMaker, then generate the PDF document again.

Before you update a publication that contains many links created using the link tool in Acrobat Exchange, be sure you understand how to maintain links. You can save time maintaining links created in Exchange by using the Document > Replace Pages command to import one or more updated pages in place of the outdated pages. Replacing a page updates the content without altering existing links for that page.

Links automatically generated by the source application, such as links created by Adobe PageMaker and FrameMaker, are always up-to-date. If links created by a source application are mixed on the same page with links created in Acrobat Exchange, use the page-replacement technique to preserve the Exchange links.

Finally, if you don't have a copy of the source application for a PDF, you can open and edit a PDF page in Adobe Illustrator.

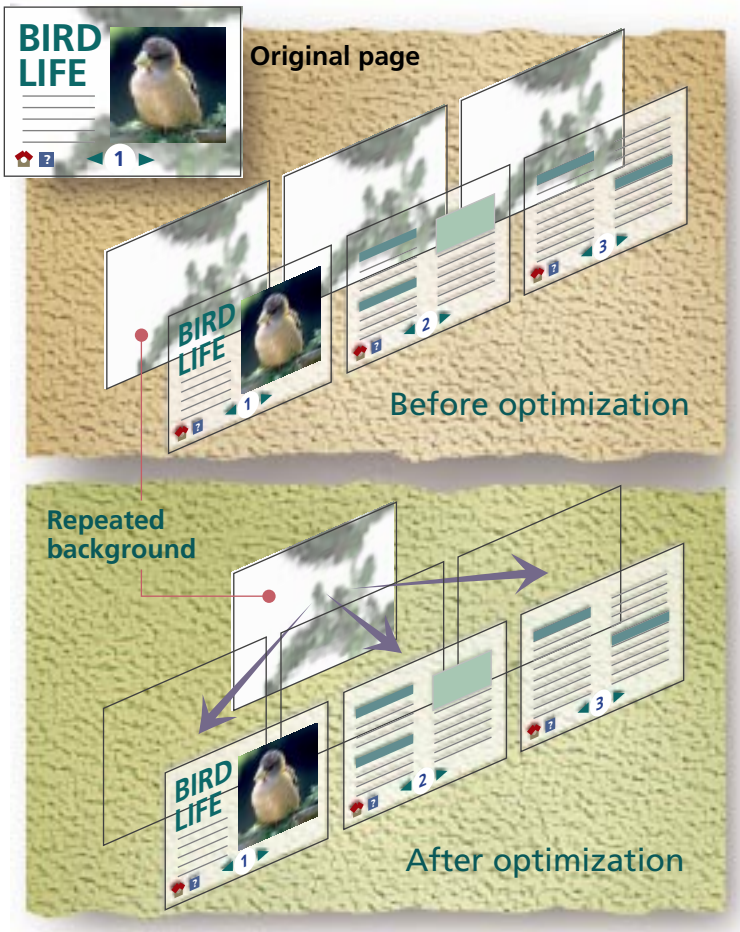


Optimizing the Final Draft

As you end a review cycle and prepare to distribute the final draft of a PDF publication, the last step is to optimize it in Acrobat Exchange by choosing the Save As command.

When you first create a PDF document, Acrobat PDF Writer, Distiller, or the Capture plug-in create a compact and efficient PDF file. However, editing and replacing pages can introduce redundant data and data marked for deletion but still included in the file, all of which add unnecessarily to the file size. When you optimize a PDF document, Acrobat Exchange analyzes it and rearranges the data for maximum efficiency and speed, particularly for page-at-a-time downloading by World Wide Web browsers. Acrobat Exchange can optimize an entire folder or directory of PDF files at once.

For more information, see the Acrobat Exchange Online Guide.



6 Distributing and Indexing PDF Documents

Overview

Information in a publication is useful only if its audience can find it. As more documents become available on networks and CD-ROMs, it becomes increasingly important to make information easy to find within stored documents.

The fastest way to locate information is to have your computer find it for you. PDF Web pages can be continuously indexed using a Web-based search engine. If you are building an electronic library of documents on a CD-ROM, you can index them using Acrobat Catalog so that anyone can search them using Acrobat Reader.

Publishing PDF Documents on the Web

A PDF page on the Web can be viewed in a Web browser as easily as—and often faster than—an HTML page. To publish PDF pages on the Web, do the following:

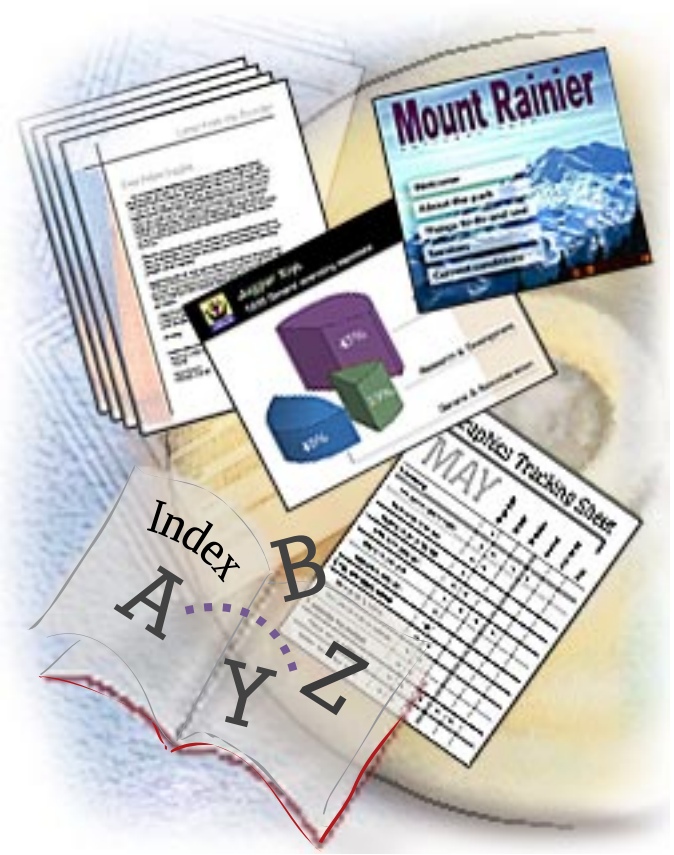
- Configure the Web server to *byteserve*, so that it sends individual PDF pages instead of the entire PDF document. For instructions, see the Adobe Home Page.
- Use the Save As command in Exchange 3.0 or later to optimize all PDF files so that they download one page at a time from a properly configured Web server.

- Make sure your audience has Acrobat Reader or Acrobat Exchange 3.0 or later. Acrobat Reader is available free of charge from the Adobe Home Page. Provide a link on your site to the Adobe Home Page in case someone does not already have Acrobat Reader.
- If a Web browser does not support Adobe Acrobat 3.0, the browser must be configured to recognize PDF documents, and set up Acrobat Reader or Exchange as a helper application. For more information, see the Adobe Home Page and the documentation for the Web browser.

Building an Electronic Library

Converting all of your electronic and paper publications into a PDF library lets you distribute and search large collections of documents quickly and easily. You can use Acrobat Catalog to create a full-text index of the PDF publications, and then use the Search command in Exchange or Reader to search the entire collection almost instantly.

You can make an electronic library accessible from Macintosh, Windows, and UNIX computers over a network or on a CD-ROM. Acrobat Catalog and Acrobat viewers can index and search PDF publications stored on Macintosh, Windows, and many UNIX platforms.



Searching PDF Files

The method you use to search PDF documents depends on how the documents are stored.

Acrobat Catalog and Search, included with Exchange, can search a library of PDF documents stored on your organization's local area network (LAN) or on a CD-ROM.

For locating information in PDF files stored on the Internet or an intranet, set up search-engine software that can search PDF files on your Web server. Your audience can then run a search using a form on one of your Web pages. Web-based searching is convenient for widely dispersed audiences such as students, field employees, or the public. Many companies develop search engines that can automatically and continuously update a search index of both PDF and HTML documents on a Web server. For a current list of companies, see the Adobe Home Page.

Publishing PDF Files on CD-ROM

CD-ROM is a useful storage medium that provides fast, comprehensive access to a large number of PDF publications. Acrobat 3.0 also includes installers you can use to create freely distributable CD-ROMs that contain Acrobat Reader and an indexed library of PDF documents.

If you are creating a cross-platform CD-ROM, use the hybrid CD-ROM format, readable by Macintosh, Windows, and UNIX computers. Using the hybrid format saves space by letting you store PDF publications once for all platforms, instead of partitioning a CD-ROM and storing duplicate information for each platform. Also, name files using the cross-platform ISO 9660 naming convention, described in the Acrobat Exchange Online Guide.

The performance of the final CD-ROM is affected by many factors, such as the arrangement of files and the degree of fragmentation on the master hard disk. If you are using a vendor to create your CD-ROM, their equipment may have specific requirements—ask how they expect the files to be delivered for optimal disk performance.

7 Customizing Adobe Acrobat

Overview

Extending Acrobat with Plug-Ins

Acrobat Software Developer Kit

Adding PDF Capabilities to Other Applications

Overview

Adobe Acrobat software can be customized to handle specialized publishing tasks. As with other professional publishing tools, a developer can create plug-in modules that add capabilities to the software. Many companies offer plug-ins that they have already developed and tested.

Because PDF is based on the PostScript language, features can be added to a PDF file by using PostScript operators. PDF support can also be added to programs that import Encapsulated PostScript (EPS) files.

Extending Acrobat with Plug-Ins

Adobe Acrobat software supports plug-in software modules that let you extend Acrobat by just dropping the module into the Acrobat Plug-Ins folder. Many features of Acrobat 3.0 are plug-ins, including links to the Web, support for movies and sound, and color calibration.

Many companies offer plug-ins they have developed for tasks such as the following:

- Automating link creation
- Teleconferencing
- Serving PDF pages as OLE documents
- Indexing and managing many documents

For more information, see the page on plug-ins on the Adobe Home Page. If you develop software, you can write your own plug-ins using the Acrobat Software Developer Kit.

Plug-ins can add commands to the menus or tools to the toolbar.

Acrobat Software Developer Kit

If you develop software, you can use the Acrobat Software Developer Kit (SDK) to create customized software solutions for different publishing needs. The Acrobat SDK gives programmers access to many areas of Acrobat, making possible enhancements such as the following:

- Creating plug-ins
- Updating Web links
- Customizing printing
- Extracting text for indexing

For information on developing software for Acrobat, contact the Adobe Software Developers Association (ASDA). See the Adobe Developer Relations Web page for contact and membership information.

Adding PDF Capabilities to Other Applications

You may be able to shorten production time for PDF documents by specifying some PDF features from your publishing applications. This is possible using ***pdfmark***, a PostScript Level 2 operator that can carry PDF information inside any PostScript file. With some programming experience you can set up applications to generate many PDF features, including the following:

- Bookmarks
- Links
- Notes
- Articles
- Document information
- Default view settings
- Page cropping
- Other information useful for applications other than Acrobat, such as custom halftones and spot functions for high-end prepress printing.

Adobe PageMaker and Adobe FrameMaker already support many PDF features directly, including automatic generation of bookmarks, index links, and article threads, so you may not need to use the pdfmark operator with those programs. See the PageMaker and FrameMaker user guides for more information. For information on using the pdfmark operator, see the pdfmark Reference Manual.

How to use this guide

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About Adobe Products and Services

More information about Adobe products and services is available through the following:

• The Adobe home page on the World Wide Web. To open the Adobe home page, use the URL http://www.adobe.com. On the Adobe home page, you can click Search to quickly find a specific topic.

• Forums on CompuServe and America Online. Forums and availability may vary by country.

• Adobe's own technical support bulletin board system. Install the First Class software from the Adobe Acrobat 3.0 CD-ROM in the Solutions/Online folder, then use your modem to call 206-623-6984.

• FaxYI, a free fax-based service that provides the latest technical information about Adobe products. To use FaxYI, call 206-628-5737. This service is available 24 hours a day, 7 days a week.

• To speak with an Adobe customer service representative, call 800-833-6687.

• To contact Adobe Acrobat technical support, call 206-628-2746 (Windows), 206-628-2745 (Macintosh), or 206-628-3950 (UNIX). Technical support is free for 90 days (new registered users) or for 30 days (new upgrade users) from the date of your first call. See Troubleshooting in the Acrobat Online Guide for more information.

• For technical and customer support information via e-mail, send an e-mail message to "techdocs@adobe.com" with "help" in the Subject field. E-mail from Adobe "techdocs" is available 24 hours a day, 7 days a week.

Production Notes

The Electronic Publishing Guide was produced using Adobe Photoshop, Adobe Illustrator, Adobe Premiere, and Adobe FrameMaker on the Macintosh and on Windows. The accompanying sample files were designed in Adobe PageMaker. All files were converted to PDF using Acrobat Distiller and then enhanced using Acrobat Exchange.

The typefaces used in this guide are 12-point Frutiger® for the body text and 28-point Colossalis® for the heads.

For more information on Adobe electronic publishing tools, see Electronic Publishing Tools and About Adobe Products and Services.

A

B

C

D

P

Electronic Publishing Guide

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